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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/869,623	06/28/2001	Ralph T. Yang	UMJ-104-BLUM	5778

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EXAMINER

ILDEBRANDO, CHRISTINA A

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 08/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Applicati n N .

09/869,623

Applicant(s)

YANG ET AL.

Examiner

Christina Ildebrando

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the c rrespondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5 and 6 is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-10, 14-17, 19 is/are rejected.
- 7) ☒ Claim(s) 11-13, 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-4, 7-10, 16-17, and 19 are rejected under 35 U.S.C. 102(a) as being anticipated by JP 10-128106.

JP 10-128106 discloses a zeolite X adsorbent which has been ion exchanged with lithium and an additional monovalent cation such as silver. The lithium is exchanged in the range of 80-88% and the silver is exchanged in the range of 2-4% [0027]-[0029]. In example 4, a zeolite X having an Si/Al<sub>2</sub> of 2.5 is exchanged with 87% Li and 3% Ag. In example 9, a zeolite X having a Si/Al<sub>2</sub> of 2.0 is exchanged with 87% Li and 2% Ag. The adsorbent is used in PSA process to selectively adsorb nitrogen from air (Claims and [0063]-[0064]).

The reference teaches that the zeolite X in sodium form is first ion exchanged with lithium followed by ion exchange with a cation such as silver [0047]-[0056]. It is taught that the exchanged zeolite may be heat treated at 300-600 degrees C in vacuum [0057]. Refer also to the examples.

With regards to the properties recites in claims 1 and 7-10, i.e. the formation of metallic silver clusters, it is the position of the examiner that because the reference teaches the same heat treatment step of the lithium and silver exchanged zeolite under

the same conditions, the same product (i.e. metallic clusters) would inherently form. When the examiner has reason to believe that the functional language asserted to be critical for establishing novelty in claimed subject matter may in fact be an inherent characteristic of the prior art, the burden of proof is shifted to Applicants to prove that the subject matter shown in the prior art does not possess the characteristics relied upon. *In re Fitzgerald et al.* 205 USPQ 594.

With regards to the limitation "wherein the composition is adapted to selectively adsorb a compound at about ambient room temperature conditions" recited in claims 1 and 16, this limitation has been regarded as a statement of intended use. While intended use recitations cannot entirely be disregarded, in composition and article claims, the intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention over the prior art. *In re Casey*, 370 USPQ 235 and *In re Otto*, 312 USPQ 458. It is the position of the examiner that the prior art structure, which contains the same components in the same arrangement as the product instantly claimed, is capable of performing the intended use and therefore meets the instant claims.

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by JP 10-128106.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-128106 as applied above for claims 1-4, 7-10, 16-17, and 19 and further in view of Yang et al.

The teachings of Yang et al. are applied as above for claims 1-4, 7-10, 16-17, and 19.

The difference between the reference and the claims is that the JP reference does not disclose that the contacting step is carried out at about ambient room temperature conditions, as required by claim 14.

Yang et al. (*Ind. Eng. Chem. Res.*, 1996, 35, p. 3093-3099) discloses a Li and Ag exchanged zeolite X which is used in a PSA process at 298 K (25 degrees C) (pages 3094-3095 and Figure 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method taught by the JP reference to include nitrogen adsorption at the higher ambient temperatures, as taught by Yang et al. Yang et al. teaches that the Li and Ag exchanged zeolite is useful at higher temperatures. One of ordinary skill would recognize the advantages of running the process at a higher temperature, i.e. process would be more economical because one would not have to cool the gases prior to the contacting step, and would therefore be motivated to make the substitution, with a reasonable expectation of success.

***Allowable Subject Matter***

5. Claims 5-6 are allowed.
6. Claims 11-13 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

7. Applicant's arguments filed July 17, 2003 have been fully considered but they are not persuasive.

With regards to the JP reference, applicant argues that the LiAg zeolites perform the worst and concludes that the reference teaches away from using such a zeolite. However, the zeolites are part of the inventive examples – their performance would appear to fall within the scope of the invention of the reference. Further, the zeolites are considered to anticipate the claimed zeolites – an argument that the reference teaches away is not relevant to the rejection at issue.

Applicant further argues that the zeolites of the JP reference are used at a lower temperature. This argument has been considered but is not persuasive. As discussed above, it is considered that the limitation “at about ambient room temperature conditions” is a statement of intended use which does not limit the product as claimed. The claimed product and the product taught by the JP reference appear to be the same. Applicant has not demonstrated how the difference in intended use would limit the product structurally as opposed to the product taught by the prior art.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Ildebrando whose telephone number is (703) 305-0469. The examiner can normally be reached on Monday-Friday, 7:30-5, with Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (703) 308-3318. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

CAI

August 25, 2003



ALEXANDRA ELVE  
PRIMARY EXAMINER